Claims

[c1] A propulsion drive arrangement for a vehicle, the arrangement comprising:
an engine;
a transfer case having an input shaft coupled to an output shaft of the engine at one end of the engine;
a transmission having an input shaft coupled to an output shaft of the transfer case;
a drive shaft coupled to an output shaft of the transmission; and
coupled to the drive shaft, means for propelling the vehicle,
wherein the engine is located at a position which is laterally offset from and adjacent to a side of the transmission so as to be essentially parallel with the the transmission along respective longitudinal axes thereof, and wherein the input shaft and output shaft of the transfer case are both located on a same side of the transfer case corresponding to the one end of the engine.

[c2] The propulsion drive arrangement of claim 1, wherein the means for propelling the vehicle includes a set of wheels attached to an axle coupled to the transmission

drive shaft through a differential.

[c3] The propulsion drive arrangement of claim 1, wherein the means for propelling the vehicle includes one or more propellers coupled to the transmission drive shaft through one or more associated propeller shafts.

[c4] The propulsion drive arrangement of claim 2, wherein both the engine and transmission are arranged behind the axle and differential in a rear-mounted engine configuration.

[c5] The propulsion drive arrangement of claim 2, wherein a moment arm of the engine and transmission arrangement is less than a distance between the differential and the transfer case.

[c6] The propulsion drive arrangement of claim 2, wherein both the engine and transmission are arranged in front of the axle and differential in a mid-mounted engine configuration.

[c7] A method of providing propulsion for a vehicle, the method comprising:
arranging an engine and a transmission to be side-by-side so that respective output shafts are essentially parallel and displaced from each other;
providing a torque output on an engine output shaft;

reversing a direction of the torque output from the engine output shaft;
coupling the reversed torque output to a transmission input; and
applying an output of the transmission to one or more drive elements of the vehicle.

[c8] The method of claim 7, wherein the applying step includes applying the transmission output to a set of wheels.

[c9] The method of claim 7, wherein the applying step includes applying the transmission output to a propeller.

[c10] The method of claim 7, further comprising ensuring that a moment arm of the engine and transmission arrrangement is within a respective length of both the engine and the transmission.